Claims:

1. A multiple wavelength light emitting device for emitting light of a plurality of differing wavelengths comprising:

light emission means for emitting light containing wavelength components to be output;

a reflecting layer placed in proximity to said light emission means;

a semi-reflecting layer group placed in opposition with said reflecting layer with said light emission means therebetween, wherein semi-reflecting layers that reflect some light emitted from said light emission means having specific wavelengths and that transmit the remainder thereof are stacked in order in the direction of light advance so as to correspond with light wavelengths to be output; and

two or more light emission regions wherein the wavelength of the output light differs; wherein:

the distance between the reflecting surface for light from the light emission means side of the semi-reflecting layer that partially reflects light output from that light emission region and a point existing in the interval from the end of said light emission means on the semi-reflecting layer group side to said reflecting layer is djusted so as to have an optical path length such that light of the wavelength output from that light emission region resonat s.

2. A multiple wavelength light emitting device according to claim 1, wherein said semi-reflecting layer group has a plurality of types of semi-reflecting layers responsive to of light of a plurality differing wavelengths that are placed uniformly without any separation between light emission regions.

3. A multiple wavelength light emitting device according to claim 1, wherein said reflecting surface for light from light emission means side of semi-reflecting layer in said semi-reflecting layer group is in a different position in thickness direction for each light emission region of different light emission wavelength.

4. A multiple wavelength light emitting device according to claim 1, wherein said point existing in interval from end of said light emission means on semi-reflecting layer group side to said reflecting layer is on reflecting surface of said reflecting layer.

5. A multiple wavelength light emitting device according to claim 4, wherein, in a light emission region that outputs light of wavelength λ, distance L between a reflecting surface for light from light emission means side of said semi-reflecting layer of said plurality of semi-reflecting layers that reflects light of wavelength λ and a point existing in interval from end of said light emission means on semi-reflecting layer group side thereof to said reflecting layer is adjusted so that

$$L = \Sigma di$$

$$\Sigma(ni \cdot di) + m_1 \cdot (\Phi/2\pi) \cdot \lambda = m_2 \cdot \lambda/2$$

where ni is refractive index of i'th substance between said semi-reflecting layer and said light emitting surface, di is thickness thereof, Φ is phase shift occurring at said reflecting surface in said reflecting layer, and m_1 and m_2 are natural numbers.

6. A multiple wavelength light emitting device according to claim 1, wherein said point in interval from end of said light emission means on semi-reflecting layer group side thereof to said reflecting layer is light emission point in said light emission means.

7. A multiple wavelength light emitting device according to claim 6, wherein, in a light emission region that outputs light of wavelength λ, distance L between a reflecting surface for light from light emission means side of said semi-reflecting layer of said plurality of semi-reflecting layers that reflects light of wavelength λ and a light emission point existing in interval from end of said light emission means on semi-reflecting layer group side thereof to said reflecting layer is adjusted so that

$$L = \Sigma di$$

$$\Sigma(ni \cdot di) = m_2 \cdot \lambda/2 + (2m_3 + 1) \cdot \lambda/4$$

where ni is refractive index of the i'th substance between said reflective surface and said light emission point, di is thickness thereof, m_2 is a natural number, and m_3 is an integer greater than 0.

8. A multiple wavelength light emitting device according to any one of claims 1 to 7, wherein, in said semi-reflecting layer group, said semi-reflecting layer that reflects light of longer wavelength is positioned on side nearer to said light emitting device.

9. A multiple wavelength light emitting device according to any one of claims 1 to 8, wherein semi-reflecting layers configuring said semi-reflecting layer group are configured with two layers of different refractive index stacked alternately.

10. A multiple wavelength light emitting device according to claim 9, wherein said semi-reflecting layers are adjusted so as to satisfy the relationship

$$n1 \cdot d1 = n2 \cdot d2 = (1/4 + m/2) \cdot \lambda$$

where n1 is refractive index of one of said two layers having different refractive indexes, d1 is thickness thereof, n2 is refractive index of other layer, d2 is thickness thereof, λ is

wavelength of light reflected in that semi-reflecting layer, and m is 0 or a natural number.

~~11. A multiple wavelength light emitting device~~ according to any one of claims 1 to 10, wherein said semi-reflecting layer group comprises gap adjustment layers, between semi-reflecting layers thereof, for adjusting distance between reflecting surface for light from said light emission means side of semi-reflecting layer other than that semi-reflecting layer closest to said light emission means and a point existing in interval from end of said light emission means on semi-reflecting layer group side to said reflecting layer.

12. A multiple wavelength light emitting device according to claim 9, wherein, in order to adjust distance between reflecting surface for light from said light emission means side of semi-reflecting layer other than that semi-reflecting layer closest to said light emission means and a point existing in interval from end of said light emission means on semi-reflecting layer group side to said reflecting layer, thickness of one layer in laminar structure wherein said layers of different refractive index configure said semi-reflecting layers is altered.

~~13. A multiple wavelength light emitting device~~ according to any one of claims ~~1 to 12~~, wherein multiple types of light emission means for emitting a relatively large amount ~~of light having light~~ components of wavelengths corresponding

~~to said light emission regions are provided so that they are~~ associated with said light emission regions.

14. A multiple wavelength light emitting device according to any one of claims 1 to 12, wherein light emission means capable of emitting light having wavelength components associated with all said light emission regions are provided commonly for all said light emission regions.

15. A multiple wavelength light emitting device according to any one of claims 1 to 14, wherein said light emission means are an organic electro-luminescence layer sandwiched between electrode layers, and electrode provided on ~~back side thereof corresponds to said reflecting layer.~~

16. A multiple wavelength light emitting device according to claim 1, wherein point where electric field becomes maximum between electrodes in said organic electro-luminescence layer coincides with said light emission point in said light emitting layer.

~~17. A multiple wavelength light emitting~~ device according to either claim 15 or claim 16, ~~wherein~~ said light emission means comprise a hole transport layer on positive electrode side of said organic electro-luminescence layer.

18. A multiple wavelength light emitting device according to any one of claims 15 to 17, wherein said light emission means comprises an electron transport layer on negative electrode side of said organic electro-luminescence layer.

19. A multiple wavelength light emitting device according to any one of claims 15 to 18, wherein distance between reflecting surface for light from light emission means side of said semi-reflecting layers and a point existing in interval from end of said light emission means on semi-reflecting layer side thereof to said reflecting layer is adjusted with thickness of positive electrode positioned on semi-reflecting layer group side of said light emission means.

20. A multiple wavelength light emitting device according to any one of claims 15 to 18, comprising a layer on semi-reflecting layer group side of said light emission means for purpose of adjusting distance between reflecting surface for light from light emission means side of said semi-reflecting layers and a point existing in interval from end of said light emission means on semi-reflecting layer side thereof to said reflecting layer.

21. A multiple wavelength light emitting device according to any one of claims 15 to 20, wherein said negative electrode is made of a material exhibiting light reflectance.

22. A multiple wavelength light emitting device according to any one of claims 15 to 21, wherein at least one of electrode films sandwiched around said organic electro-luminescence layer is formed separately and is independently, associated with said light emission regions.

23. A multiple wavelength light emitting device according to claim 22, wherein one or other of said electrode

films is separated by a partition member that partitions said light emission regions from one another.

24. A multiple wavelength light emitting device according to claim 22, wherein, of said electrode films, the negative electrode is separated in association with said light emission regions, and thickness of said positive electrode is altered in association with said light emission regions in order to adjust distance between reflecting surface for light from light emission means side of said semi-reflecting layers and a point existing in interval from end of said light emission means on semi-reflecting layer side thereof to said reflecting layer.

25. A multiple wavelength light emitting device according to claim 22, wherein, of said electrode films, the positive electrode is separated in association with said light emission regions, and thickness thereof is altered in association with said light emission regions in order to adjust distance between reflecting surface for light from light emission means side of said semi-reflecting layers and a point existing in interval from end of said light emission means on semi-reflecting layer side thereof to said reflecting layer.

26. A multiple wavelength light emitting device according to claims 22 to 25, comprising drive circuits for individually driving said electrically separated electrode films.

27. An electronic apparatus comprising:

the multiple wavelength light emitting device claimed in claim 26.

28. A electronic apparatus according to claim 27, wherein said light emission regions in said multiple wavelength light emitting device are formed as pixels for displaying images, and function as display elements configured so that the driving of pixels can be controlled in response to image information.

29. An interference mirror comprising:

a plurality of interference reflecting layers configured so that some light of mutually different wavelength can be reflected, positioned sequentially in the direction of the optical axis; and

gap adjustment layers positioned between said interference reflecting layers.